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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,449	06/27/2003	Rafael Carbunaru	AB-233UI	6613

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EXAMINER

KAHELIN, MICHAEL WILLIAM

ART UNIT	PAPER NUMBER
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3762

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/609,449

Applicant(s)

CARBUNARU ET AL.

Examiner

Michael Kahelin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 and 44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 and 44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/4/2006 has been entered.

Election/Restrictions

2. Claims 24-43 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/15/2006.
3. Applicant's election without traverse of claims 1-23 and 44 in the reply filed on 12/15/2006 is acknowledged.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2-4, 6, 9, 10, 17, 18, 20-22, and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly

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claim the subject matter which applicant regards as the invention. In regards to claims 2-4, 6, and 9, the circuitry elements are lacking a structural relationship to the other elements of the claimed subject matter. A system claim may not be a listing of parts. In regards to claim 10, the chair pad is lacking a structural relationship to the other claim elements. In regards to claim 17, the speaker is lacking a structural relationship to the other claimed elements, as is the booster coil of claim 18, and the circuitry of claim 44. In regards to claim 20, the implantable stimulator is inferentially included, so should not be further limited. It is suggested to first positively recite the element before it is further limited. In regards to claim 21, the second clause of the claim contains a typographical error, which renders the claim unclear. It is suggested to delete "power levels detected by the".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 4, 20, 21 and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Schulman et al. (US 2003/0078634, hereinafter "Schulman").

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8. In regards to claim 1, Schulman discloses a base station (162), a coil connected to the base station (158), and means for driving the coil as a charging coil or communication coil (par. 0007).

9. In regards to claim 2, the device is configured for forward/back FSK telemetry (par. 0029).

10. In regards to claim 4, the system further comprises a current measuring circuitry (par. 0025). Although Schulman discloses that the battery current is measured, the coil current is also measured because the current to the battery is delivered by the coil.

11. In regards to claim 20, the stimulator is an implantable microstimulator with a maximum length of about 3.5 cm and a maximum width of about 5 mm (see US 6,315,721, which is incorporated by reference into Schulman's disclosure).

12. In regards to claim 21, the system comprises a sensor for detecting power levels in the coil (in the form of power level detected in the implanted device), and a variable output power source that is contained in the base station and automatically adjusts downwards when the sensor detects power levels that exceed predetermined levels (par. 0026).

13. In regards to claim 44, an automatic power shut-off circuitry shuts off power to the coil (par. 0026, i.e. "continues to provide charging power until...its battery 104 is charged").

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claims 7, 9, and 17 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Schulman. Schulman discloses the essential features of the claimed invention, including a second coil (Figs. 4-6) capable of use for zero-volt battery recovery because it delivers an electromagnetic charging current to the implanted device, power sensing circuitry (see above), and a speaker (see US 6,185,452, incorporated by reference into Schulman's disclosure). Alternatively, Schulman discloses the essential features of the claimed invention except for a coil used for zero-volt battery recovery. It is known in the art to charge depleted batteries to restore function to an implanted device. Therefore, it would have been

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obvious to one having ordinary skill in the art at the time the invention was made to modify Schulman's invention by providing a coil used for zero-volt battery recovery to restore function to an implanted device.

17. Claims 3, 8, 11, 12, 13, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulman. Schulman discloses the essential features of the claimed invention including providing the coils in a chair pad (Fig. 4), but does not expressly disclose OOK telemetry, a coil having two layers of 3 turns each, a coil having 24 turns around a 200 mm spool, a chair pad comprising polyurethane or a PCB, a slip cover over the chair pad, a power supply of 7V to 20V, or a current below 4.5A and voltage below 25V. It would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the charging system as taught by Schulman with the OOK telemetry, a coil having two layers of 3 turns each, a coil having 24 turns around a 200 mm spool, a chair pad comprising polyurethane or a PCB, a slip cover over the chair pad, a power supply of 7V to 20V, or a current below 4.5A and voltage below 25V because applicant has not disclosed that OOK telemetry, a coil having two layers of 3 turns each, a coil having 24 turns around a 200 mm spool, a chair pad comprising polyurethane or a PCB, a slip cover over the chair pad, a power supply of 7V to 20V, or a current below 4.5A and voltage below 25V provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the system as taught by Schulman because Schulman's both telemetry protocols effectively transmit the data necessary for operation, both coils have the number of turns and

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diameter necessary to effectively charge the implanted device, both chair pad materials effectively support the coil structures, both power supplies are of a voltage sufficient to charge the implanted device, and both coil voltages and currents are low enough to effectively charge the device without burning the patient. Therefore, it would have been an obvious matter of design choice to modify Shulman's invention to obtain the invention as specified in the claims.

18. Additionally, it is well known in the art to provide charging devices in chair pads having slip covers and low voltage and current values to allow movable placement with a soft, washable surface, and to avoid high-power coils that can potentially generate large amounts of heat. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Schulman's invention with a charging device in a chair pad having a slip cover and low voltage and current values to allow movable placement with a soft, washable surface, and to avoid a high-power coil that can potentially generate large amounts of heat.

19. Claims 5, 6, 10, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulman in view of Zarinetchi et al. (US 2003/0171792, hereinafter "Zarinetchi '792"). Schulman discloses the essential features of the claimed invention, including automatically shutting off power to the coil (par. 0026) and chair pad (Fig. 4), but does not disclose that a temperature sensor coupled to a PCB shuts off power, automatically detection disconnection of the chair pad cable. Zarinetchi '792 teaches of providing a heat sensor (par. 0027) to avoid overheating of componentry during charging operations. Further, it is well known in the art to provide means to

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automatically detect the disconnection of cables to provide for notification to reconnect the cable and resume operations. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Schulman's invention with heat sensor to avoid overheating of componentry during charging operations and a means to automatically detect the disconnection of the cable to provide for notification to reconnect the cable and resume operations.

20. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulman in view of Zarinetchi et al. (US 2002/0058971, hereinafter "Zarinetchi '971"). Schulman discloses the essential features of the claimed invention except for a grounded shield and a housing comprising polyurethane foam with the claimed dimensions. Zarinetchi teaches of providing the primary coil of a charging device with a grounded shield (abstract) to reduce sensitivity to surrounding objects. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Schulman's invention with a grounded shield to reduce sensitivity to surrounding objects. Further, it would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the chair pad as taught by Schulman with the polyurethane and claimed dimensions because applicant has not disclosed that polyurethane and the claimed dimensions provide an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the chair pad as taught by Schulman because both pads are suitable for a sitting patient and are of a size conducive to location over the implanted device. Therefore, it would have been an

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obvious matter of design choice to further modify Schulman's invention to obtain the invention as specified in the claims.

21. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulman in view of Hahn et al. (US 6,212,431, hereinafter "Hahn"). Schulman discloses the essential features of the claimed invention except for an impedance matching network utilizing 50-Ohm matching networks. Hahn teaches of providing an external charging device and implantable stimulator with an impedance matching network utilizing 50-Ohm matching networks (col. 7, line 56) to maintain optimal power transfer characteristics. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Schulman's invention by providing an external charging device and implantable stimulator with an impedance matching network utilizing 50-Ohm matching networks to maintain optimal power transfer characteristics.

Response to Arguments

22. Applicant's arguments with respect to claims 1-23 and 44 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kahelin whose telephone number is (571) 272-8688. The examiner can normally be reached on M-F, 9-5.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on (571) 272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MWK


4/10/07


GEORGE R. EVANISKO
PRIMARY EXAMINER

84/12/7